

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

The Examiner noted a discrepancy in the PTO-1449 Form submitted with the Information Disclosure Statement filed January 11, 2005, and requested that a corrected PTO 1449 Form be submitted. Applicant is submitting herewith a corrected PTO-1449 Form correcting the discrepancy.

Claims 11-20 are presented for consideration. Claims 11, 14, 16 and 18 are independent. Claims 11, 13, 14, 16 and 18 have been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

Applicant requests favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 11-20 were rejected under 35 U.S.C. § 103 as being unpatentable over European Patent Application No. 0 961 149 (Wagner). Claims 11-20 also were rejected under § 103 as being unpatentable over European Patent Application No. 1 039 509 (Nishi et al.). Still further, claims 11-20 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,707,532. These rejections are respectfully traversed. Nevertheless, Applicant submits that independent claims 11, 14, 16 and 18, as presented, amplify the distinctions between the present invention and the cited art.

In one aspect of the present invention, independent claim 11 recites an exposure apparatus including a projection optical system of a catadioptric type, and an optical element disposed on a reciprocating light path of the projection optical system. The optical element is movable along an optical axis of the projection optical system to change aberration of the projection optical system to be produced due to exposure.

In another aspect of the present invention, independent claim 14 recites an exposure apparatus including a projection optical system of a catadioptric type. The projection optical system includes (i) a first mirror for reflecting light from a light source thereby to define a reciprocating light path, and (ii) a second mirror disposed at a position not intercepting a path of the light from the light source to the first mirror, for directing light from the first mirror along a one-way light path off the reciprocating light path. The apparatus also includes an optical element disposed on the reciprocating light path of the projection optical system. The optical element is movable along an optical axis of the projection optical system to change aberration of the projection optical system.

In a further aspect of the present invention, independent claim 16 recites an exposure apparatus including a projection optical system of a catadioptric type, an optical element disposed on a reciprocating light path of the projection optical system, and an actuator for actuating the optical element along an optical axis of the projection optical system to change aberration of the projection optical system.

In still another aspect of the present invention claim 18 recites an exposure apparatus including a projection optical system of a catadioptric type. The projection optical system includes an optical element disposed on a reciprocating light path of the projection optical system at a position where a light passing region of the light traveling along a forward light path and a light passing region of the light traveling along a backward light path are overlapped with each other, and the optical element is movable along an optical axis of the projection optical system

In such an arrangement, the present invention provides a significant technical advantage or efficient correction of symmetric aberration that is not taught or suggested by the art. Accordingly, Applicant submits that the cited art does not teach or suggest such features of the present invention as recited in the independent claims.

The Wagner publication relates to an arrangement in which an optical element disposed on a single path is moved. Applicant submits, however, that the Wagner document does not teach or suggest anything about a movable element disposed in a reciprocating light path in the manner of the present invention, as recited in the independent claims.

For the reasons noted above, Applicant submits that the Wagner publication does not teach or suggest many features of the present invention, as recited in the independent claims.

The Nishi et al. publication relates to an arrangement in which an optical element disposed on a single path is moved. Applicant submits, however, that the Nishi et al. publication, as with the Wagner document, does not teach or suggest anything regarding a movable element disposed in a reciprocating light path, in the manner of the present invention recited in the independent claims.

Regarding the obviousness-type double patenting rejection, Applicant has amended the independent claims to recite the feature that the optical element is movable along the optical axis of the projection optical system. Applicant submits that such features of the invention, as recited in pending independent claims 11, 14, 16 and 18, are not recited in claims 1-11 of the '532 patent. Accordingly, Applicant also submits that the obviousness-type double patenting rejection has been overcome. Such favorable indication is requested.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 11, 14, 16 and 18, is patentably defined over the cited art.

Dependent claims 12, 13, 15, 17, 19 and 20 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Steven E. Warner", written over a horizontal line.

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